

REMARKS

This application has been reviewed in light of the Office Action dated December 14, 2005. Claims 1-18 are presented for examination, of which Claims 1 and 15-17 are in independent form. Claims 1, 10, 13 and 15-17 have been amended to define still more clearly what Applicant regards as her invention. Favorable reconsideration is requested.

In the outstanding Office Action, Claim 17 was under 35 U.S.C. § 101 as being directed to non-statutory subject matter. That claim has been amended to recite that the claimed program is stored in a computer-readable storage medium. Accordingly, withdrawal of that rejection is respectfully requested.

Claims 1, 2, 5-13 and 15-18 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,108,441 (*Hiratsuka et al.*). In addition, Claim 3 was rejected under 35 U.S.C. § 103(a) as being obvious from *Hiratsuka* in view of U.S. Patent 5,231,504 (Magee), Claim 4, as being obvious from *Hiratsuka* in view of U.S. Patent 5,937,089 (Kobayashi), and Claim 14, as being obvious from *Hiratsuka* in view of U.S. Patent 6,172,681 (Ueda).

As is discussed in more detail in the application, the present invention concerns techniques for achieving color matching at a printer. Color matching is commonly performed using a look-up table ("LUT"), but often, the result is not wholly satisfactory to the user, and a further slight adjustment is attempted. One technique for this is to change the particular color that the user is dissatisfied with; this approach, however, has the disadvantage of producing a discontinuity in the image. On the other hand, it is known to use a masking procedure to modify, in effect, the entire LUT. This avoids

discontinuity problems, but affects the entire color space of the output image, which may be undesirable to do, and is certainly unnecessary. This approach also requires a great deal of processing, and accordingly, takes a great deal of time.

The present invention is intended to provide a way of achieving the desired additional adjustment, where needed, without encountering either the mentioned problems of discontinuities, excessive changes to the color space, and excessive processing times.

The aspect of the invention set out in independent Claim 1 is an image processing apparatus for performing color adjustment for image data, and comprises designating means for designating a reference color, an adjusted color of the reference color, and an adjustment region, including the reference color and the adjusted color, in a color space. The apparatus also has region determining means for determining whether a pixel value of input image data is in the adjustment region, and adjusted value calculating means for calculating an adjusted pixel value of the image data on the basis of a function of the reference color, the adjusted color and a boundary of the adjustment region, if the region determining means determines that the pixel value of the image data is in the adjustment region.

By virtue of this arrangement, color adjustment is performed at a point only if the pixel value of the point falls within a specified region of the color space, and because this region is relatively limited, the changes made do not affect the entire color space, and do not require such heavy commitments of processing time as in the prior art. At the same time, the problems encountered conventionally with discontinuities are avoided, as well.

Hiratsuka relates to a color adjustment method of setting a designated color and a designated adjustment color, and performing color adjustment of a color image.

Hiratsuka, however, is silent about designating an adjustment region and performing color adjustment of a color image using a function of the reference color, the adjusted color and the boundary of the adjustment region.

Also, even if *Hiratsuka* be deemed to teach that a reference color and an adjusted color are designated in LCH color space, nothing has been found in that patent that would teach or suggest anything about designating a correction execution range and performing color adjustment within such correction execution range.

In contrast, because an apparatus constructed according to Claim 1 designates a reference color, an adjusted color of the reference color, and an adjustment region that includes the reference color and the adjusted color, in a color space, and determines whether a pixel value of input image data is in the adjustment region in the color space, and if so, calculates an adjusted pixel value of the image data on the basis of a function of the reference color, the adjusted color and a boundary of the adjustment region, the apparatus is able to perform color adjustment within just a designated adjustment region. In this way, the apparatus can perform color adjustment based on unique rules, which cannot be obtained using the *Hiratsuka* device.

Accordingly, Applicant believes that Claim 1 is allowable over *Hiratsuka*.

Independent Claims 15-17 are method, system and program claims, respectively, corresponding to apparatus Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as a

reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and allowance of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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